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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,182	05/31/2007	Lai Albert	PAT051413-US-PCT	7439

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EXAMINER	
TSAY, MARSHA M	

ART UNIT	PAPER NUMBER
1656	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)
	10/574,182	ALBERT, LAI
	Examiner	Art Unit
	Marsha Tsay	1656

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 April 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *31 and 40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *31 and 40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)	
1) ☒ Notice of References Cited (PTO-892)	4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) ☐ Notice of Informal Patent Application
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.	6) ☐ Other: _____.

This Office action is in response to Applicants' remarks received April 6, 2011.

Applicants' arguments have been fully considered and are deemed to be persuasive to overcome some of the rejections previously applied. Rejections and/or objections not reiterated from previous Office actions are hereby withdrawn.

Claims 1-30, 32-39 are canceled. Claims 31, 40 are currently under examination.

Priority: The request for priority to provisional application 60/507682, filed September 30, 2003, is acknowledged.

Objections and Rejection

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. (US 20040086913; previously cited) in view of Ruben et al. (US 6475753). Williams et al. disclose nucleic acids that are expressed in human tissue (i.e. human colon) that can comprise a sequence set forth in any one of SEQ ID NOS: 1-316 and further disclose that an "identifying sequence" is a contiguous sequence that can be at least about 10-20 contiguous nucleotides (p. 1

[0011]). Williams et al. further disclose diagnostic assays that involve detecting the expression of nucleotides set forth in any one of SEQ ID NOS: 1-316 (p. 14 [0124-0125]). Williams et al. disclose detecting colon cancer (p. 18 [0156]). Williams et al. disclose a method of detecting a cancer state of a mammalian cell comprising detecting the expression of an identifying sequence of one of SEQ ID NOS: 1-316, wherein the detection of the differentially expressed identifying sequence is correlated with a cancerous state of the cell from which the test sample was derived (p. 175 claim 11). Williams et al. disclose that SEQ ID NO: 44 are nucleotides of dkk1 (p. 34 Table 2). Williams et al. do not teach a nucleotide sequence comprising instant SEQ ID NO: 27.

Ruben et al. disclose SEQ ID NO: 68, a nucleotide sequence comprising instant SEQ ID NO: 27 (col. 246 lines 49-52). A search of the prior art reveals that SEQ ID NO: 68 of Ruben et al. is associated with nucleotide sequence of dkk proteins and soggy protein (col. 246 lines 49-52).

It would have been obvious to one of ordinary skill in the art at the time of the invention to detect colon cancer associated with expression of a nucleic acid in a test cell sample comprising detecting a level of expression of at least one identifying sequence which consists of 20 contiguous nucleotides from SEQ ID NO: 68 of Ruben et al., (i.e. ATCGACAAGGTACCCAGGAT instant SEQ ID NO: 27), and compare the expression level of the identifying sequence in the test sample with a level of expression of nucleic acid in a normal cell sample where an altered level of expression of said identifying sequence is indicative of colon cancer in the test cell sample, based on the teachings of Williams et al. and Ruben et al. (claim 31). It should be noted that the positions 329-330 of instant SEQ ID NO: 15 are the nucleotides "ga". Therefore, an identifying sequence of 20 contiguous nucleotides from SEQ ID

NO: 68 of Ruben et al. could reasonably include at least the nucleotides "ga," as well as the 20-mer ATCGACAAGGTACCCAGGAT (instant SEQ ID NO: 27). MPEP 2143 notes that the rationale to support a conclusion that the claim would have been obvious is that a particular known technique was recognized as part of the ordinary capabilities of one skilled in the art. One of ordinary skill in the art would have been capable of applying this known technique to a known product and the results would have been predictable to one of ordinary skill in the art.

Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alsobrook et al. (US 20040023241) in view of Williams et al. (US 20040086913; previously cited). Alsobrook et al. disclose a method for determining the presence of or predisposition to a disease associated with altered levels of expression of a nucleic acid molecule comprising measuring the level of expression of said nucleic acid molecule in sample from the mammalian subject and comparing the level of expression of the nucleic acid molecule to a control sample, wherein an altered level of expression of the nucleic acid molecule compared to the control sample would be indicative of the disease (p. 283 claim 35). Alsobrook et al. disclose that the nucleic acid molecules can be set forth in any one of SEQ ID NOS: 2n-1, wherein n is an integer between 1 and 77 (p. 280 claim 20). Alsobrook et al. disclose SEQ ID NO: 87 (a soggy-1 protein), which comprises instant SEQ ID NO: 28 (p. 5 Table A). Alsobrook et al. also disclose that the nucleic acid molecule can be an oligonucleotide consisting of 15 to 30 nucleotides of at least 6 contiguous nucleotides of any one of SEQ ID NOS: 2n-1 (p. 8 [0059]). Alsobrook et al. disclose that the disease can be colon cancer and disclose general working examples of measuring increased expression of a gene in colon cancer tissue (see working examples of Alsobrook et al.). Alsobrook et al. also disclose

that soggy-1 is a Dickkopf (Dkk)-related protein (p. 108-109). Alsobrook et al. do not explicitly disclose correlating SEQ ID NO: 87 with colon cancer.

As previously noted, Williams et al. disclose nucleic acids that are expressed in human tissue (i.e. human colon) that can comprise a sequence set forth in any one of SEQ ID NOS: 1-316 and further disclose that an "identifying sequence" is a contiguous sequence that can be at least about 10-20 contiguous nucleotides (p. 1 [0011]). Williams et al. further disclose diagnostic assays that involve detecting the expression of nucleotides set forth in any one of SEQ ID NOS: 1-316 (p. 14 [0124-0125]). Williams et al. disclose detecting colon cancer (p. 18 [0156]). Williams et al. disclose a method of detecting a cancer state of a mammalian cell comprising detecting the expression of an identifying sequence of one of SEQ ID NOS: 1-316, wherein the detection of the differentially expressed identifying sequence is correlated with a cancerous state of the cell from which the test sample was derived (p. 175 claim 11). Williams et al. disclose that SEQ ID NO: 44 are nucleotides of dkk1 (p. 34 Table 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to detect colon cancer associated with expression of a nucleic acid in a test cell sample comprising detecting a level of expression of at least one identifying sequence which consists of 20 contiguous nucleotides from SEQ ID NO: 87 of Alsobrook et al., (i.e. TTCCTGAAAGTACCCAGGAT instant SEQ ID NO: 28), and compare the expression level of the identifying sequence in the test sample with a level of expression of nucleic acid in a normal cell sample where an altered level of expression of said identifying sequence is indicative of colon cancer in the test cell sample, based on the teachings of Alsobrook et al. and Williams et al. (claim 40). It should be noted that the positions 188-189 of instant SEQ ID NO: 25 are the

nucleotides "gt". Therefore, an identifying sequence of 20 contiguous nucleotides from SEQ ID NO: 87 of Alsobrook et al. could reasonably include at least the nucleotides "gt," as well as the 20-mer TTCCTGAAAGTACCCAGGAT (instant SEQ ID NO: 28). MPEP 2143 notes that the rationale to support a conclusion that the claim would have been obvious is that a particular known technique was recognized as part of the ordinary capabilities of one skilled in the art. One of ordinary skill in the art would have been capable of applying this known technique to a known product and the results would have been predictable to one of ordinary skill in the art.

In their remarks, Applicants assert that the Examiner has rejected claims 31 and 40 under 35 U.S.C. §103(a), as allegedly being obvious in light of Williams et al., (US2004/0086913, henceforth "Williams"). The Examiner asserts that Williams discloses nucleic acids in any one of SEQ ID NOs: 1-316, that are expressed in human colon and could be used in the detection of colon cancer. Williams discloses that SEQ ID NOs: 1-316 are identifying sequences. These sequences are found by sequencing clones of eDNA libraries, clustering these sequences, and using BLAST to segregate them into unknown, weak similarity and high similarity sequences when compared to genes contained in the GenBank database at the time of filing. By this method, Williams' experiments attempted to establish novel expressed genes. However, by using this methodology, Williams does not teach or suggest the DKKL-1 variants as disclosed in the instant application nor does Williams teach or suggest the currently claimed method of detecting colon cancer. As such, claims 31 and 40 are not obvious under 35 U.S.C. §103(a), and the Applicants respectfully respect withdrawal of this rejection.

Applicant's arguments have been fully considered but they are not persuasive.

Reply: The deficiency of Williams et al. to disclose the instant DKKL-1 variants (i.e. SEQ ID NOS: 27 and 28) are believed to be remedied by the Ruben et al. and Alsobrook et al. references, respectively. The 103(a) rejection is noted above.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 31, 40 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 60 of copending Application No. 11887692 ('692). Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims and the '692 claim are both drawn to a method for detecting a level of expression of a DKKL1 nucleic acid in a patient's cancer sample. The '692 specification discloses that the DKKL1 splice product modulator can be at least 15 contiguous

nucleotides of a DKKL1 nucleotide sequence and the '692 specification also discloses that said cancer can be colon cancer. The '692 specification also discloses DKKL-1 isoform nucleotide sequences (i.e. SEQ ID NOS: 1 and 5), wherein said nucleotide sequences comprise instant SEQ ID NOS: 27 and 28, respectively.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

No claim is allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marsha Tsay whose telephone number is (571)272-2938. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Manjunath N. Rao can be reached on 571-272-0939. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marsha Tsay/
Primary Examiner, Art Unit 1656

June 27, 2011